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Author and original designer of the OneLife Basic Nutrition System (BNS-2D): Carlos Daniel Borrego Romero.

GLOBAL PROTOCOL FOR THE PRODUCTION, DISTRIBUTION, AND USE OF THE ONELIFE BASIC NUTRITION SYSTEM (BNS-2D)

Multicontinental Standard

1. Purpose

1.1. This standard establishes the minimum requirements for the design, formulation, production, distribution, and use of the OneLife Basic Nutrition System (BNS-2D), intended to ensure a minimum daily nutritional intake for vulnerable populations.

1.2. This standard is intended for adoption by Member States, United Nations agencies, the Red Cross and Red Crescent, humanitarian organizations, and private-sector actors involved in food security.

1.3. This standard promotes coordinated action among governments, United Nations agencies, civil society organizations and responsible private-sector partners within transparent, accountable multi-stakeholder frameworks.

2. Scope of Application

2.1. The BNS-2D shall apply to:

- Populations experiencing food insecurity or malnutrition.
- Areas affected by conflict, displacement, or natural disasters.
- School feeding and community nutrition programs.
- Emergency response operations.
- Regions with limited infrastructure or constrained supply chains.

2.2. The BNS-2D shall function as a daily nutritional core and is not intended to replace local foods when such foods are available.

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2.3. This standard is intended to complement, and not to replace, existing evidence-based protocols for the treatment of acute malnutrition and other specific clinical conditions. Therapeutic products such as ready-to-use therapeutic foods (RUTF) and specialized supplementary foods shall continue to be used in accordance with established clinical guidelines.

3. Guiding Principles

3.1. **Universality.** A single global nutritional logic shall be established for use across all operational contexts.

3.2. **Localization.** Ingredients shall be adapted to regional agriculture while maintaining nutritional equivalence with the reference formulation.

3.3. **Low Cost.** The system shall remain economically accessible to governments and non-governmental organizations in order to permit large-scale implementation.

3.4. **Stability.** The final product shall remain stable for at least 12 months at ambient temperature without refrigeration.

3.5. **Safety.** Micronutrient dosing accuracy, pathogen absence, and compliance with applicable food safety requirements shall be ensured.

3.6. **Scalability.** Production shall be technically feasible in any country with basic processing and quality-control infrastructure.

3.7. **Cultural Neutrality.** The organoleptic profile of the product shall be mild and culturally neutral in order to maximize acceptability among target populations.

3.8. **Food System Safeguards.** Programmes using OneLife shall be designed and periodically reviewed to avoid unintended displacement of local food systems, retail markets or smallholder livelihoods, and to promote, where feasible, the use of locally and regionally produced raw materials.

3.9. **Food System Transformation.** The design and implementation of OneLife shall support the transformation of agri-food systems towards healthier, more sustainable and more resilient models, consistent with global frameworks including the Sustainable Development Goals and the United Nations Decade of Action on Nutrition.

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4. Authorized Product Forms

4.1. The OneLife system may be produced and distributed in the following nutritionally equivalent forms:

- Dry powder blend for reconstitution with safe drinking water.
- Ready-to-consume solid product in the form of a compact nutritional bar or equivalent format.

4.2. Both product forms shall comply with the same nutritional specifications per dose and with the same safety, stability, and quality requirements established in this standard.

4.3. Selection of product form shall be based on operational conditions, including availability of safe drinking water, transport feasibility, thermal stability, cultural acceptability, and humanitarian context of use.

5. Daily Nutritional Requirements

5.1. The BNS-2D shall be administered in two daily doses separated by an interval of approximately eight hours.

5.2. Daily nutritional targets for the standard adult population shall be as follows:

- 800-1,000 kcal of metabolizable energy.
- 45-60 g of protein.
- 25-35 g of fat.
- 70-100 g of carbohydrates.
- 25-35 g of dietary fiber.
- 100% of essential daily micronutrient requirements in accordance with applicable international recommendations or other recognized standards.

5.3. The first dose shall provide approximately:

- 400-500 kcal.
- 20-25 g of protein.
- 10-15 g of fat.

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- 35-50 g of carbohydrates.
- 10-15 g of fiber.
- 50-60% of the micronutrient premix.

5.4. The second dose shall provide approximately:

- 400-500 kcal.
- 25-35 g of protein.
- 15-20 g of fat.
- 30-50 g of carbohydrates.
- 15-20 g of fiber.
- The remaining 40-50% of the micronutrient premix.

6. Continental Formulation Framework

6.1. The total dry mix shall be considered equal to 100%. Each region shall use low-cost, widely available staple crops while maintaining nutritional equivalence with the target profile.

6.2. Conceptual regional formulations shall be as follows:

Region	OneLife Conceptual Formula (percentage of dry mix)
Africa	30-35% sorghum/millet; 15-20% cowpea; 10-15% soy, where available; 10-15% microencapsulated peanut/sesame oils; 10-15% local fibers; 3-7% reinforced premix.
Latin America	30-40% maize/oats; 25-30% soy protein; 10-15% bean/lentil; 8-12% soy/canola oil; 10-15% fibers; 2-5% premix.
North America	25-30% oats; 20-25% pea protein; 15-20% soy protein; 8-12% canola/linseed oil; 10-15% fibers; 2-5% premix.
Europe	25-30% oats; 20-25% pea protein; 10-15% fava/lentil; 8-12% rapeseed oil; 15-20% fibers; 2-5% premix.
Asia	25-30% rice/millet; 20-25% soy protein; 10-15% lentil/chickpea; 8-12% sesame/soy oil; 15-20% fibers; 2-5% premix.

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Oceania	25-30% oats; 20-25% pea protein; 10-15% soy protein; 8-12% canola/linseed oil; 15-20% fibers; 2-5% premix.
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6.3. Any substitution of ingredients shall demonstrate documented nutritional equivalence, particularly with respect to essential amino acids, essential fatty acids, and critical micronutrients.

7. Production Requirements

7.1. Production facilities shall include, at a minimum:

- A dry-mixing plant.
- Hermetic packaging equipment.
- Capacity for oil microencapsulation, where applicable.
- A basic quality-control laboratory.

7.2. Where the nutritional bar presentation is used, the production process shall ensure uniform compaction, physical stability of the product, and homogeneous nutrient distribution per unit.

8. Mandatory Quality Controls

8.1. Each production batch shall be subject, at a minimum, to the following controls:

- Moisture content below 8%.
- Absence of pathogens, including *Escherichia coli*, *Salmonella* spp., and molds.
- Verification of nutrient profile and nutrient density in accordance with formulation specifications.
- Stability testing demonstrating a minimum shelf life of 12 months at ambient temperature.

8.2. For the nutritional bar presentation, in addition to the requirements under Section 8.1, hardness, structural integrity, transport resistance, and organoleptic stability under warm and temperate climatic conditions shall be verified.

8.3. Quality-control procedures shall be documented and maintained in accordance with applicable international standards of manufacturing practice and sanitary control.

9. Distribution and Logistics

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9.1. The product shall be packaged in durable sachets or individual units, hermetically sealed, and marked with universally understandable pictogram-based instructions.

9.2. The product shall not require refrigeration at any stage of the supply chain within the specified shelf-life period.

9.3. Distribution may be carried out through ministries of health, relevant United Nations agencies, national Red Cross and Red Crescent societies, non-governmental organizations, and private humanitarian partners.

10. Instructions for Beneficiaries

10.1. **Powder presentation.** Each dose shall be prepared by mixing 80-100 g of product with 300-400 ml of safe drinking water and shall be consumed immediately after preparation.

10.2. **Bar presentation.** Each dose shall be delivered as a ready-to-consume unit with nutritional content equivalent to that of the powder presentation.

10.3. Combination of the product with sugary beverages is discouraged where such use would alter the intended nutritional purpose or compromise digestive tolerance.

11. Adaptations for Specific Population Groups

11.1. For children, portions shall be adjusted according to body weight and applicable national or international pediatric recommendations.

11.2. For pregnant and lactating women, an increase of approximately 20% above the standard dose is recommended unless otherwise indicated clinically.

11.3. For populations with high energy expenditure, a third daily dose may be added where operational conditions and resource availability permit.

12. Role of Humanitarian and Private Partners

12.1. Humanitarian and private partners may contribute through local or regional production, donation of raw materials, support for packaging, logistics and transport, financing of community-scale

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production facilities, and innovation in flavor, texture, or fortification, provided that the nutritional equivalence defined in this standard is maintained.

Priority shall be given, wherever feasible and consistent with safety and quality requirements, to sourcing raw materials from local and regional producers in ways that strengthen sustainable food systems.

12.2. All OneLife variants shall remain nutritionally equivalent to the reference profile established in Sections 5 and 6.

13. Transparency, Monitoring, and Oversight

13.1. Each product batch shall be accompanied by a certified nutritional profile issued by the responsible quality-control laboratory.

13.2. Governments and responsible authorities shall submit quarterly reports on the production, distribution, and use of the BNS-2D to the relevant coordination mechanisms.

13.3. Non-governmental organizations and private partners implementing this protocol shall publish periodic impact reports including, at a minimum, coverage, protocol adherence, and associated adverse events.

13.4. Where feasible, existing national laboratory networks, inspection services and regulatory frameworks used for large-scale food fortification programmes may be leveraged to support quality assurance and control of OneLife products.

14. Final Declaration

14.1. This standard shall be implemented through a phased approach to validation, including initial pilot studies, subsequent effectiveness evaluations in target population groups, and continuous post-implementation surveillance.

14.2. Member States and implementing partners are encouraged to design and conduct context-appropriate clinical and operational studies to confirm safety, acceptability, and effectiveness of the OneLife Basic Nutrition System (BNS-2D) across different age groups and settings.

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14.3. This standard shall be applied in accordance with national food safety regulations and may be further specified by national competent authorities, provided that any adaptations preserve the nutritional and safety objectives defined herein.

14.4. Implementing agencies shall establish mechanisms for monitoring adverse events, managing product complaints and, where necessary, initiating timely product recalls in line with national and international good practice.

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